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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/529,208	12/16/2005	Christian Kuhrs	268557US0PCT	8828

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EXAMINER	
NGUYEN, NGOC YEN M	
ART UNIT	PAPER NUMBER
1754	

SHORTENED STATUTORY PERIOD OF RESPONSE	NOTIFICATION DATE	DELIVERY MODE
3 MONTHS	04/10/2007	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Notice of this Office communication was sent electronically on the above-indicated "Notification Date", and has a shortened statutory period for reply of 3 MONTHS from 04/10/2007.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No.	Applicant(s)	
	10/529,208	KUHRS ET AL.	
	Examiner	Art Unit	
	Ngoc-Yen M. Nguyen	1754	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 January 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over F. Hund (3,667,913), optionally further in view of Itoh et al (4,774,070).

Hund '913 discloses a method for catalytically oxidizing hydrogen chloride with oxygen to form chlorine and water. The process comprises catalyzing such oxidation by a chromium oxide catalyst and carrying out said oxidation at about 240 to 600°C (note claim 1). This range overlaps the claimed range of less than 300°C. With respect to the encompassing and overlapping ranges previously discussed, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time of invention to select the portion of the prior art's range which is within the range of the applicants' claims because it has been held prima facie case of obviousness to select a value in a known range by optimization for the results. *In re Boesch*, 205 USPQ 215. Additionally, the subject matter as a whole would have been obvious to one of ordinary skill in the art at the time invention was made to have selected the overlapping portion of the range disclosed by the reference because overlapping ranges have been held to be a prima facie case of obviousness. *In re Malagari*, 182 USPQ 549.

Hund '913 teaches that it is possible to use the catalyst on a support material, such as aluminum oxide, etc (note column 3, lines 34-38). For other support material, without a showing of criticality or unexpected results, it would have been obvious to one skilled in the art to use any conventional carrier to support the catalyst of Hund '913.

Hund '913 further discloses that it is possible to combine the catalyst having a chromium dioxide basis with other oxidation catalysts, e.g., Au, Ag, alkali metal, rare earth metal, Pt, etc. (note column 3, lines 44-59). It would have been obvious to one skilled in the art to select any one or any combination of the other oxidation catalysts among the specifically mentioned in the list of Hund '913.

For the "consisting essentially of" language as required in the instant claim 20, the transitional phrase "consisting essentially of" limits the scope of a claim to the specified materials or steps "and those that do not materially affect the basic and novel characteristic(s)" of the claimed invention. In re Herz, 537 F.2d 549, 551-52, 190 USPQ 461, 463 (CCPA 1976). For the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, "consisting essentially of" will be construed as equivalent to "comprising." See, e.g., PPG, 156 F.3d at 1355, 48 USPQ2d at 1355. If an applicant contends that additional steps or materials in the prior art are excluded by the recitation of "consisting essentially of," applicant has the burden of showing that the introduction of additional steps or components would materially change the characteristics of applicant's invention. In re De Lajarte, 337 F.2d 870, 143 USPQ

256 (CCPA 1964). See also Ex parte Hoffman, 12 USPQ2d 1061, 1063-64 (Bd. Pat. App. & Inter. 1989) (note MPEP 2111.03).

It would have been obvious to one skilled in the art to operate a known process continuously, In re Dinot, 319 F.2d 188, 138 USPQ 248 (CCPA 1963).

Hund '913 does not specifically disclose that the catalyst is used in a form of a fixed bed or fluidized bed, however, both types of beds are known and conventional in the art, it would have been obvious to use either one in the process of Hund '913 and to optimize the process temperature and pressure accordingly.

For the apparatus limitation, such limitation is given little weight because it would not render to process unobvious, especially when the apparatus, such as shell and tube exchanger is a known and convention fixed bed reactor.

For the amount of the other oxidation catalysts, Hund '913 does not specifically disclose an example using gold (Au) in combination with chromium oxide, however, for other oxidation catalysts, such as Sb_2O_3, TeO_2, as exemplified in column 4, note experiments (3)-(6), the amount of the other oxidation catalysts is about 6.3% (= 80 / (1190+80)). In the event that a support was used, it would have been obvious to one skilled in the art to optimize the amount of the weight of the catalytically active compounds in the catalyst in order to sufficiently carry out the process of Hund '913. The process limitations in claims 1-3 are noted. However, when the examiner has found a substantially similar product as in the applied prior art, the burden of proof is shifted to applicant to establish that their product is patentably distinct and not the examiner to

show the same process of making. *In re Brown*, 173 USPQ 685 and *In re Fessmann*, 180 USPQ 324.

Optionally, Itoh '070 is applied to teach a process for producing chlorine using a catalyst (note claim 1). Itoh '070 discloses that a fixed bed reactor or a fluidized bed reactor can be used (note column 5, lines 19-31). The pressure for the reactor can be 0.1-5 kg/cm^2G while the reaction temperature is 300-500°C (note column 6, lines 14-20).

Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 1,263,806 or Trubenbach et al (5,935,897), optionally in view of Itoh '070.

GB '806 discloses a process for producing a halogen, wherein a hydrogen halide and oxygen are contacted together and reacted in the presence of an active catalyst which is a 13X molecular sieve and in which is deposited or exchanged a metal selected from one of the Group IB, IIB, VB, VIB, VIIB, VIII and the rare earth metals of Group IIIB, of the Periodic Table of the Elements (note claim 1). Suitable Group IB metals are copper, gold and silver.

Since gold is specifically disclosed as one of suitable metal for the catalyst, it would have been obvious to one of ordinary skill in the art to select gold as the metal in the process of GB '806.

The zeolite in GB '806 is considered as an alumina-containing support.

The temperatures for the reactions are preferred to be from 500 to 1000°F or 260-537°C. This range overlaps the claimed range of less than 300°C, note In re Malagari as stated above.

GB '806 further discloses that the catalyst has particularly useful in fixed bed reactions (note page 4, lines 13-16).

Alternatively, Trubenbach '897 discloses a process for preparing chlorine from hydrogen chloride by using a catalyst (note column 12, lines 29-63). The catalyst can have the catalytic metal support on a carrier (note Example 9). Trubenbach '897 teaches the catalyst or catalyst support can include 15-70% by volume of at least one of I) oxide of aluminum, titanium, zirconium, etc., II) a metallic powder selected from compounds metals and alloys of the elements gold, ruthenium, silver, rare earth, etc., III) an active component selected from the group of the inorganic acids, the metals lithium, sodium, potassium, calcium, strontium, gold, silver, etc. (note claim 2).

For the process limitations for the product claims 1-3, note In re Fessmann and In re Brown as stated above.

The difference is GB '806 or Trubenbach '897 does not specifically the amount of gold in the catalyst.

It would have obvious to one of ordinary skill in the art at the time the invention was made to optimize the amount of gold in the catalyst for the process of GB '806 in order to promote the oxidation of hydrogen chloride to produce chlorine.

Itoh can be applied as stated above.

Applicant's arguments filed January 20, 2007 have been fully considered but they are not persuasive.

Applicants argue that Hund provides no guidance with regard to which catalyst to select, and how much of each.

In Hund, all other oxidation catalyst are specifically recited and Hund further discloses that the catalysts to be used can be extensively modified by appropriate choice of the guest components for chromium dioxide by varying the particle size, by admixing with other activating or inactivating substances, and by the choice of the support materials and can thus be adapted to the oxidation reaction in a given catalyst (note column 3, lines 59-65). Thus, it would have been obvious to one of ordinary skill in the to select any one metal, such as gold, among the specifically listed components in Hund, Merck & Co. Inc. v. Biocraft Laboratory Inc., 10 USPQ 1846.

Applicants argue that in Applicants' claims, the gold is applied to the support as an aqueous solution of a gold compound.

This limitation is considered as a "product-by-process" limitation, note In re Fessmann, In re Brown as stated above.

Applicants argue that Hund does not suggest gold as an active metal on titanium dioxide, zirconium dioxide, or aluminum oxide.

Hund does disclose that the support material can be aluminum oxide among others (note column 3, lines 34-38).

Applicants argue that Hund teaches that chromium oxide is essential.

The "comprising" in Applicants' claim 1 does not exclude the presence of chromium oxide.

Applicants argue that GB '806 discloses the use of a zeolite but while zeolite contains aluminum, it is not, however, an aluminum oxide carrier.

In GB '806, the terms "zeolitic molecular sieves" or molecular sieves" are employed to mean sieves consisting of three-dimensional frameworks of SiO and AlO, tetrahydra, cross-linked by the sharing of oxygen atoms (note sentence bridging the two columns on page 2). The disclosure of "AlO" fairly suggests the presence of aluminum oxide in the zeolite molecular sieve. Furthermore, it is commonly known in the art that molecular sieve zeolite can be expressed as $M_{2/n}O * Al_2O_3 * YSiO_2 * wH_2O$.

Applicants argue that Truenbach mentions the oxidation of hydrogen chloride as one process among many, in which an expensively vast variety of possible catalyst combinations resulting from the combination of materials (I) with (II) and/or (III) according to the reference may be used.

Again, since Truenbach specifically discloses the process of oxidation of hydrogen chloride and gold as a suitable component for the catalyst, it would have been obvious to select the process of oxidation of hydrogen chloride among other processes and to select gold regardless of how big is the list of possible processes or components for the catalyst, see & Co. Inc. v. Biocraft Laboratory Inc., 10 USPQ 1846.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ngoc-Yen M. Nguyen whose telephone number is (571) 272-1356. The examiner is currently on a Part time schedule.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stanley Silverman can be reached on (571) 272-1358. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Ngoc-yen Nguyen
Ngoc-Yen M. Nguyen
Primary Examiner
Art Unit 1754

nmn
April 2, 2007